

End Semester Examination (ESE), 2021

Semester: 6th (Regular/Retest)

AC Distribution and Utilisation

Subject Code: EI- 602

Total Marks: 56

Time: 2 Hour 30 minutes

All questions are compulsory

PART – A

Marks – 10

1. Answer the following questions 1 x 10 = 10
- i. Solid angle is expressed in -----.
 - ii. Does distribution transformer link primary and secondary system?
 - iii. What is another name of three-part tariff?
 - iv. Is overhead system is more flexible than underground system?
 - v. What is the unit of illumination?
 - vi. What type of heating method has maximum power factor?
 - vii. $KVAR = KW$ ----
 - viii. What is the statutory limit for voltage variation at consumer's terminal?
 - ix. The process of providing an oxide film is known as -----.
 - x. What are the three types of electrical drives?

PART – B

Marks – 46

2. Explain the causes of low power factor of the supply system. 3
3. What are the advantages of electric heating? 3
4. Explain briefly space-height ratio and depreciation factor. 3
5. Define distribution system. What are the main elements of distribution system? 3

6. State the important factors on which the selection of electrical drives depends? 3
7. What are the advantages of implementing SCADA system for electrical power distribution. 4

OR

7. Discuss about the different modes of heat transfer. 4
8. Explain Faraday's Laws of Electrolysis. 4
9. Discuss the general construction of underground cable. 4
10. What are the different types of tariff? Write short notes on three-part tariff. 4
11. Define the term welding. What are the advantages of electric resistance welding? 5

OR

11. What properties are considered for selecting material for heating element? What are the methods of electric heating? 5
12. A 3 phase, 4 KW induction motor has a power factor of 0.8 lagging. A bank of capacitors is connected in delta across the supply terminals and power factor raised to 0.95 lagging. Determine the KVAR rating of the capacitors connected in each phase. 5

OR

12. A consumer has a maximum demand of 200 KW at 40% load factor. If the tariff is Rs 150 per KW of maximum demand plus Rs 5.00 per KWh, find the overall cost per KWh. 5
13. Explain the method of solving A. C. distribution problem when p. f. of load current is given w. r. t. receiving end voltage. Also draw the vector diagram. 5

OR

13. The candle power of a lamp is 120. A plane surface is placed at a distance of 2.5 meter from this lamp. Calculate the illumination on the surface when it (i) normal, (ii) inclined to 45° and (iii) parallel to rays. 5

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